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MAY 18 2004  
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1      **AMENDMENTS TO THE CLAIMS**

1-34 (Canceled).

1      35. (Currently Amended) A method of characterizing a large group of biological cells,  
2            comprising:

3      a) separating the cells so that the cells of the large group are preponderantly separated from each  
4            other;

5      b) characterizing each cell according to an aspect of the vibrational spectrum of each cell,  
6            wherein the vibrational spectrum of each cell is analyzed for indications that the cell is  
7            in a cell division stage, and;

8      c) statistically analyzing the characteristics of the [groups] cells.

9      36. (Original) The method of claim 35, wherein the results of the statistical analysis is the  
10           percentage of the cells of the group which are in a cell division stage.

1      37. (Previously Amended) The method of claim 36, wherein the indication that a cell is in a cell  
2           division stage is the presence of a signal indicating DNA in the vibrational spectrum .

1      38. (Original) The method of claim 37, wherein the separated cells are located according to the  
2           fluorescence of the cells.

1      39. (previously presented ) The method of claim 35, wherein the vibrational spectrum of each  
2           cell is the recording of an infrared absorption spectrum for each cell.

1 40. (previously presented ) The method of claim 39, wherein the results of the statistical  
2 analysis is the percentage of the cells of the group which are in a cell division stage.

1 41. ( previously presented ) The method of claim 40, wherein the indication that a cell is in a cell  
2 division stage is the presence of a signal indicating DNA in the infrared absorption spectra.

1 42. ( previously presented ) The method of claim 41, wherein the separated cells are located  
2 according to the fluorescence of the cells.

1 43. (previously presented ) The method of claim 35, wherein the vibrational spectrum of each  
2 cell is the recording of a Raman spectrum for each cell.

3 44. (previously presented ) The method of claim 43, wherein the results of the statistical  
4 analysis is the percentage of the cells of the group which are in a cell division stage.

1 45. ( previously presented ) The method of claim 44, wherein the indication that a cell is in a cell  
2 division stage is the presence of a signal indicating DNA in the infrared absorption spectra.

1 46. ( previously presented ) The method of claim 45, wherein the separated cells are located  
2 according to the fluorescence of the cells.

1 47. ( currently amended ) A method, comprising:  
2 locating a very large number of separated cells with a location means;  
3 illuminating the cells with light;  
4 recording light emitted from the cells; and  
5 characterizing the vibrational spectrum of the light emitted from [the cells] each cell located by  
6 the location means, wherein the vibrational spectrum is analyzed for indications that the  
7 cell is in a cell division stage.

1 48. ( previously presented ) The method of claim 47, wherein the vibrational spectrum  
2 characterization means comprises a means for generating and for transmitting infrared  
3 light through each cell.

1 49. ( previously presented ) The method of claim 48, wherein the means for generating infrared  
2 light comprises a first laser having a first defined infrared wavelength.

1 50. ( previously presented ) The method of claim 49, wherein the first laser is pulsed when the  
2 location means locates a first cell in a position to be characterized by the first laser.

1 51. ( previously presented ) The method of claim 49, wherein the first defined wavelength  
2 comprises a wavelength wherein DNA is highly absorbing.

1 52. ( previously presented ) The method of claim 51, wherein a second laser having a second  
2 infrared wavelength is pulsed to characterize the cell, wherein the second infrared  
3 wavelength comprises a wavelength wherein RNA is highly absorbing.

1 53. ( previously presented ) The method of claim 48, wherein the means for generating infrared  
2 light comprises a third laser having a broad band infrared wavelength range.

3 54. ( previously presented ) The method of claim 53, wherein the third laser is pulsed when the  
4 location means locates a first cell in a position to be characterized by the laser.

1 55. ( previously presented ) The method of claim 54, wherein the broad band infrared  
2 wavelength range includes a wavelength wherein DNA is highly absorbing.

1 56. ( previously presented ) The method of claim 55, wherein the broad band infrared  
2 wavelength range includes a wavelength wherein RNA is highly absorbing.

1 57. ( previously presented ) The method of claim 56, wherein the infrared absorption spectrum  
2 of each cell is recorded.

1 58 ( previously presented ) The method of claim 57, wherein the infrared absorption spectrum  
2 of each cell is analyzed for indications that the cell is in a cell division stage.

1 59. ( previously presented ) The method of claim 58, wherein the percentage of the cells in the  
2 cell division stage is calculated.

1 60. ( previously presented ) The method of claim 59, wherein the indication that a cell is in a  
2 cell division stage is the presence of a signal indicating DNA in the infrared absorption  
3 spectra.

1 61. ( previously presented ) The method of claim 47, wherein the location means is a  
2 fluorescence activated sorting method

1 62. ( previously presented ) The method of claim 47, wherein the vibrational spectrum

1 characterization means comprises a means for illuminating the cells, and a means for  
2 analyzing the Raman scattered light emitted from the cells.

1 63. ( previously presented ) The method of claim 62, wherein the means for illuminating the  
2 cells comprises a first laser having a first defined wavelength.

1 64. ( previously presented ) The method of claim 63, wherein the first laser is pulsed when the  
2 location means locates a first cell in a position to be illuminated by the first laser.

1 65. ( previously presented ) The method of claim 64, wherein the Raman spectrum of each cell  
2 is recorded.

1 66. ( previously presented ) The method of claim 65, wherein the Raman spectrum of each cell  
2 is analyzed for indications that the cell is in a cell division stage.

1 67. ( previously presented ) The method of claim 66, wherein the indication that a cell is in a  
2 cell division stage is the presence of a signal indicating DNA in the Raman spectra.